

Curriculum for the 21st Century

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The question explored here is this: Is curriculum for the 21st century best organized around the traditional disciplines, or is there a more promising alternative? The answer offered is that our best option is to stretch the disciplines from within, push back the boundaries now separating them, and ask how each of the expanded subjects can be designed to promote new aims for the 21st century.

1 Introduction

Virtually all over the world, the school curriculum is organized into courses centered on the traditional disciplines. Other courses appear occasionally. In the United States, when a problem arises, the standard response is to add a course. Thus we may see courses in sex education, driver safety, everyday nutrition, or moral education. However, these courses rarely count toward college admission. For this purpose, the disciplines remain sacred.

The practice of emphasizing the traditional disciplines has actually hardened in recent years with the growth of participation in Advanced Placement courses and International Baccalaureate programs. In addition, more cities and states in the United States now require virtually all secondary school students, regardless of their talents, to take standard academic courses. This requirement is defended in the name of equality of opportunity, but some of us believe that it is demonstrably unfair to force students into courses they hate and deprive them of courses (or programs) better suited to their talents and interests (Noddings, 2007).

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2 Goals and Aims in Education

There is little discussion of aims in the United States today. It is as though the whole matter were long ago decided, and the problem to be addressed is how to get all students successfully through the standard curriculum. Twin economic aims are implicit: to produce students who will be economically successful as individuals and to maintain the economic supremacy of the nation.

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Educators and policymakers have not always embraced such narrow aims. In 1918, the National Education Association produced a report, *Cardinal Principles of Secondary Education* (NEA, 1918), that suggested seven aims: health, command of fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, and ethical character. The report was thought by some to presage a healthy transformation of secondary education, but it was condemned by others as the beginning of the end—the downfall—of American education. Those who have spoken in condemnation of the broader curriculum introduced by the comprehensive high school ignore the fact that the introduction of new courses and tracks made it possible to increase enrollment in secondary schools from barely 7% in 1900 to well over 50% by the middle of the 20th century. That is a remarkable achievement.

Although the aims recommended by the *Cardinal Principles* are rarely mentioned today, they may be more important now than they were in 1918. Families and home life have changed significantly. Often both parents work outside the home, and much time at home is spent watching television or communicating via computer. Little time may be spent working together on household tasks, and even less time may be devoted to the kinds of discussions that contribute to the education of whole persons. Indeed, 21st century schools may be called upon to take over many of the functions once assigned to homes.

We should note that these aims—with occasional exceptions—are not best pursued directly as specific learning objectives. Instead, they provide a lens through which we select topics, pedagogical methods, organizational features of our schools, and by which we evaluate what we are doing. As we plan, teach, and evaluate, we ask how our work is or is not promoting growth toward each of these aims.

Today, there are again a few voices raised in praise of efforts such as the *Cardinal Principles* and in opposition to the present trend to over-emphasize academic courses for all students. But this time, a question is raised whether a traditional program of studies in discrete disciplines is the best course of study for anyone. In the 21st century, even specialists may need a broader education than one provided by narrowly defined disciplines. Such an education may require substantial reorganization of the curriculum. At the least, it will require stretching the disciplines from within and blurring the lines between them. The biologist, E. O. Wilson remarks:

There is, in my opinion, an inevitability to the unity of knowledge. It reflects real life. The trajectory of world events suggests that educated people should be far better able than before to address the great issues courageously and analytically by undertaking a traverse of disciplines. We are into the age of synthesis, with a real empirical bite to it. (2006, p. 137)

Some argue for a synthetic organization around themes, subordinating the disciplines to great social problems (Noddings, 2005a). Others, largely in agreement with the first group, argue for greater emphasis on attitudes, values, and social skills (Cheng, in press). What are these new aims, and what would the new forms of organization look like?

3 Educational Aims for a Changing World

As we consider educational aims for the 21st century, perhaps the first move should be to

reaffirm aims of the sort set out in the *Cardinal Principles*. There was then, and there still is, a need to educate whole persons. It is not impossible to do this through the traditional disciplines, but it is difficult. Early in the 20th century, Alfred North Whitehead criticized the “fatal disconnection of subjects which kills the vitality of our modern curriculum.” He went on to say:

There is only one subject-matter for education, and that is Life in all its manifestations. Instead of this single unity, we offer children—Algebra, from which nothing follows; Geometry, from which nothing follows; Science, from which nothing follows; History, from which nothing follows; a Couple of Languages, never mastered; and lastly, most dreary of all, Literature, represented by plays of Shakespeare, with philological notes and short analyses of plot and character to be in substance committed to memory. (1967, pp. 6-7)

This is a devastating criticism of early 20th century curriculum. Today the problem Whitehead discussed may be even worse. Many more facts have been amassed in the disciplines, and territorial lines are drawn even more tightly. Mathematics teachers are neither prepared nor encouraged to discuss literature, and tenth grade literature teachers may be forbidden to teach literature prescribed for the eleventh grade. Moreover, the emphasis on preparation for standardized tests discourages the exploration of matters that cross disciplinary lines and reach into life itself.

Whitehead, a first-rate mathematician, was not arguing against the study of quantity, nor am I. He wrote:

Elegant intellects which despise the theory of quantity, are but half developed. They are more to be pitied than blamed. The scraps of gibberish, which in their school-days were taught to them in the name of algebra, deserve some contempt. (1967, p. 7)

In our current zeal to teach all children—regardless of their own interests and talents—“algebra,” the scraps of gibberish have grown into volumes, and more universal aims are neglected. Inner city teenagers, exposed to phony algebra, do not understand basic matters of quantity such as how they are cheated by check-cashing outfits.

In addition to the aims directed at satisfying personal lives, we now must prepare students for the new occupational structures of a post-industrial world. The work world, like that of home and family, has changed substantially. More workers are employed in relatively small organizations instead of the huge manufacturing plants characteristic of the early 20th century. Many work-places are not as hierarchically organized as they once were, and workers are evaluated by their peers as well as their bosses. Team work is required. Moreover, many jobs now require means-ends planning, diagnosis of problems, and cooperation in the search for solutions. Mindless, repetitive work has not disappeared, but it is no longer the norm. Then, too, few workers will devote their whole working life to one employer; most will change jobs, and many will make dramatic mid-career changes.

Aims for this new occupational world include:

Ability to communicate effectively

Ability to work as a team member

Flexibility

Preparedness to face changes and challenges

Preparedness to identify and solve problems

Skill in analysis and conceptualization
Capacity and willingness to learn new things
Ability to question, challenge, and innovate
Willingness and capacity to assume personal responsibility
Capacity for self-reflection and self-management (adapted from Cheng, in press).
These aims are required by demonstrable changes in the world of work.
Combined with aims directed at a satisfying life as an individual and citizen, a justifiable agenda for education in the 21st century bears little resemblance to the dull, grinding labor of attaining higher scores on standardized tests of narrowly defined subject matter.

4 Taking the New Aims Seriously

It is highly unlikely that the curriculum for secondary education will be reorganized around categories different from the traditional disciplines. Even if pre-college educators were enthusiastic about such a move, the colleges and universities would block it. The organization of their own curriculum and their criteria for admission ensure the continued emphasis on the disciplines as preparation for college.

However, the cause of curricular transformation is not hopeless. Thoughtful educators at both college and pre-college levels take seriously a call for more connections among subjects and for increased attention to the qualities required of 21st century workers. If the disciplines will remain as the nominal heart of the curriculum, their characterization and isolation may change.

Again, the new aims, like those named in the *Cardinal Principles*, should not be treated as specific learning objectives. We cannot design a set of lessons on “team membership” and expect that, at its conclusion, everyone will pass a test on teamwork. Instead, we have to ask how our selection of topics and teaching methods may contribute to the development of these attitudes and skills. Surely the search for real-life meaning is fundamental in learning to communicate, in developing the willingness to face changes and engage in analysis, self-reflection, and problem solving. A curriculum that demands relentless memorization and continual preparation for standardized tests is unlikely to promote such development.

It may help to give several examples of the sort of changes that are feasible. In the subject called *English* (or substitute the native language of other countries), literature plays a central role. But the literature selected for the curriculum could be chosen for its relevance to various existential and social questions. The usual way of selecting literary works is to list authors who should be read and then select those works that seem appropriate for a given age group. Sometimes, because those works are truly timeless, existential and social themes are paramount, but they are often ignored in favor of discussion of literary style, use of metaphor, and vocabulary. With deliberate emphasis on problems central to real life, teachers would be encouraged to discuss these themes and to connect what is read to discussions in other classes.

We should note also that the list of master-works—candidates for a canon—has grown so large that it is difficult to agree on which authors should be included. This is another reason for rejecting this method of selection. Of course, we would like our students to appreciate the power and beauty of great writing, but we would also like them to see literature as a contribution to their search for meaning in their own lives.

For example, students interested in their own reasons for learning—for achieving an edu-

cation—might find much to discuss in John Knowles, *A Separate Peace*, Charles Dickens, *Hard Times*, William Golding, *Lord of the Flies*, Muriel Sparks, *The Prime of Miss Jean Brodie*, George Orwell, “Such, such were the Joys,” and parts of Thomas Hardy, *Jude the Obscure*. Several of these works already appear in the American curriculum but, because they are not chosen as exemplars of a theme, students may not make the connection to “life itself.”

In *A Separate Peace*, the narrator, Gene, looks back on his days as a student in a prestigious boys’ school. Highly competitive as a student, Gene identified the great weakness of Chet, his nearest rival for academic honors. Chet was genuinely interested in some of what was taught, and this genuine interest distracted him from the pursuit of high grades in all subjects. Gene, in contrast, treated all subjects and all ideas alike. This is a sad and important message for today’s teenagers, many of whom are under enormous pressure to achieve high grades (Pope, 2001). Is there no room for genuine love of learning?

Hard Times describes a father, Thomas Gradgrind, who forbids his children to imagine or speculate. They must stick to the facts, and the novel’s headmaster, M’Choakumchild, insists on the same approach in his teaching. The students are filled with trivial, mostly irrelevant facts, although they are longing for emotional connection and meaning in life. This story also echoes life in too many of today’s schools.

Reading *Lord of the Flies* with an emphasis on education, students should consider whether a different form of education might have prevented Jack from becoming a cruel tyrant and perhaps have helped Ralph to foresee the tragic events that took place. Or is it possible that children (through at least their early teens) need careful adult supervision?

In reading *The Prime of Miss Jean Brodie*, students have an opportunity to examine the motives of teachers. Do all teachers have the best interests of their students at heart, or are some motivated by the desire for power and admiration? What about the students who betray their peers to curry the favor of a teacher?

We are encouraged to think of schooling as a benefit, but many students suffer in school. Orwell’s “Such, such were the Joys,” is a moving account of such suffering.

If education is accepted as a theme, teachers might want to add further biographical material. For example, reading about Winston Churchill’s school experience yields an opportunity not only to criticize the curriculum that Whitehead found stifling but also to connect literature to history.

Teachers in different cultures will, of course, choose different literature. However, the basic idea remains intact. Existential themes are universal. Choose a theme that matters, and pursue it in some depth. Themes to consider include love of place, war and peace, our relation to nonhuman animals, religion and spirituality, virtue and vice, friendship, and romance. It may be especially important to do this today in countries, such as the United States, where the curriculum has been widely criticized as “a mile wide and an inch deep.”

Consider another example, this time from science. In the United States, there are those who would like to include “creationism” or “intelligent design” as well as evolution in biology classes. In most places, this move has been blocked on the grounds that these alternatives are not science, but religion. This seems undeniably right. However, many of us believe that the debate itself and its fascinating history should be part of every student’s education. Agreeing that creationism and its variants are not science and that they should not be presented as science, we still believe that the social problems of this debate should be explored.

In science class? This challenge illustrates the dilemma faced by those who would trans-

form curriculum for the 21st century. The sharp division of subject matter along traditional disciplinary lines continually prevents wide-ranging and relevant exploration. My own answer is yes, of course, the discussion should take place in science class and in any other class where related questions arise. The division of subject matters is today preventing the pursuit of aims associated with genuine education.

But if we relax disciplinary lines and discuss topics in history, literature, religion, biography (the life of Charles Darwin), and politics in biology, how can we possibly cover the material required by the course of study? We cannot, and it can be argued that we should not “cover” so much material. Our aim is to *educate*, to encourage careful thinking (Noddings, 2006), critical examination of information, a commitment to examine all sides, and to allow time for genuine interest—perhaps even enthusiasm—to develop. We must have time to push back the boundaries of the disciplines

There is a related problem in the science curriculum, and higher education bears much responsibility for it. Colleges require “real” science—technical biology, physics, and chemistry—and they scorn what is called “popular science.” But intelligent non-scientists depend regularly on popular science to inform us about matters of health, the natural environment, the effects of various drugs, progress in space, and technology. We may not be able to name the amino acids that construct proteins or the precise constitution of DNA, but we know that certain traits and dispositions can be traced to certain genes—their presence, absence, or mutation, and we know that the analysis of DNA has provided the evolutionary evidence once sought through fossil remains.

Too many teenagers today are forced to take courses in technical science—courses designed to prepare them for further courses in sciences, not for full, healthy adult lives. When we look carefully at the material chosen for college preparatory courses, we see that, too often, “nothing follows” from it except for those few who eagerly look forward to further courses in the same subject. To provide for these students is a difficult and complex problem that must be addressed. Its details are beyond the scope of this brief article, but its importance should not be denied.

We should look at one more example of ways in which to stretch the disciplines from within. The case of *social studies* is instructive. First, the 20th century change from history, civics, and geography as separate subjects to social studies is an early example of trying to push back the boundaries of discrete disciplines. The new area was to incorporate not only the three basic subjects but also some economics, politics, sociology, and perhaps psychology. It is a sign of what transformationists are up against that there are still vigorous opponents of the move away from history and civics, and even those of us who approve the change deplore the loss of geographical topics in the curriculum. However, we believe that elements of geography conforming to 21st century aims can be incorporated into a vital new curriculum (Thornton, 2007).

In the United States, critics of the move to social studies cite surveys that reveal the shocking ignorance of our citizens on basic facts of American history and government. A cry heard repeatedly is that the schools must return to teaching these essential facts. But the schools *do* teach these facts! The facts are simply lost in volumes of information that may be retained until a test is passed and then forgotten. Most people who answer the survey questions successfully are not responding with information retained from their school days but with knowledge continually gathered and interpreted through their on-going interest in public affairs. It is this attitude of continuing interest and the skills acquired through its exercise that the 21st century curriculum should promote.

Of all the school subjects, social studies is perhaps the easiest to transform in the direction

discussed here, because it has already sought to unify several disciplines. Its successes and failures should be studied carefully. If the American trend toward an increase in the use of standardized tests as the main measure of achievement continues, we can predict a deterioration of social studies into discrete studies of history, economics, civics (or government), and geography.

Such fragmentation would be unfortunate in an age when attention must be given to the problems of resources (especially water), environmental preservation, religious understanding, peace, world health, technology, post-industrial work, the condition of minorities, and globalization (Noddings, 2005b). Notice that, in tackling these problems, the aims suggested for a 21st century curriculum are vital. People must work together, communicate effectively, be willing and able to solve problems without undo self-interest, and be flexible in the face of change.

Again, I do not mean to underestimate the problems involved in attempting this transformation of curriculum. It is easy to talk about skills associated with the values we recommend. But what, exactly, are these skills, and how are they best promoted? We have to ask not only what *all* students need to learn and be able to do but also what students with specialized interests need. What role should schools play in preparing future specialists? Which of the aims can be addressed in virtually all courses offered in our schools? Which require special attention? How might the organization of our secondary schools affect the promotion of our aims? What role is played, for example, by extra-curricular activities? How do our methods of evaluation enhance or detract from our efforts at the unification of knowledge? How can teachers be prepared for such large changes?

5 Conclusion

I have offered a tentative and preliminary answer to the question posed at the beginning of this article: Is curriculum for the 21st century best organized around the traditional disciplines or is there a more promising alternative? Because it seems likely that the disciplines will continue to serve as the organizing rubric for the curriculum, I have suggested that they be stretched from within, that we push back the boundaries between disciplines and ask how each of the expanded subjects can be designed to promote new aims for the 21st century.

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